

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) An isolated, synthetic or recombinant χ -conotoxin peptide having the ability to inhibit neuronal amine transporter comprising the following sequence of amino acids:

Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQ ID NO. 3

where Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys; or a sequence in which Gly, Tyr, Lys or Leu are subject to conservative amino acid substitution or side chain modification, wherein said substitution or side chain modification for Tyr is a substitution of Tyr with MeY, Phe or Trp, and said substitution or side chain modification for Leu is a substitution of Leu with Val, Ile, Hle or Nle; with the proviso that the peptide is not χ -MrIA, χ -MrIB, Mar2, CMrVIA, Bnl.5, MrI.3 or Aul.4; or a salt, ester, amide, prodrug or cyclised derivative thereof.

2. (Withdrawn) The χ -conotoxin peptide according to claim 1 comprising the following sequence of amino acids:

Xaal Xaa2 Xaa3 Xaa4 Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQ ID NO. 4

where

Xaal is selected from Trp, DTrp, Tyr, Phe, hPhe, Ala, MeY, Arg, Ben, Nap, Orn, pGlu, DpGlu and a deletion;

Xaa2 is selected from Arg, Ala, Asn, Lys, Phe, BHK, Orn, Lys, DArg, Nle, DLys, DMK, DAsn, Thr, ABZ, Nap, Cit, Val, Tyr, Trp, pGlu, DpGlu or a deletion;

Xaa3 is selected from Gly, Asp, Lys, Arg, Ala, Nle, Ser or Phe;

Xaa4 is selected from Val, Leu, Nle, Ile, Thr, Ala, Asn, Trp, Phe and Abu, and

Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys;

or a sequence where one or more of the loop 1 residues Gly, Tyr, Lys and Leu are subject to conservative amino acid substitution or side chain modification;

and or a salt, ester, amide, prodrug or cyclised derivative thereof.

3. (Withdrawn) The χ -conotoxin peptide according to claim 2 comprising the following sequence of amino acids:

Xaa1 Xaa2 Xaa3 Xaa4 Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQ ID NO. 4

where Xaa1 is selected from Trp, Tyr, Phe, hPhe, Ala, MeY, Arg, Ben and Nap,

Xaa2 is selected from Arg, Asn, Lys, BHK, Orn, Lys, DArg, Nle, DLys, DMK, DAsn, Thr, ABZ, Nap, Cit and Val,

Xaa3 is selected from Gly, Asp, Lys, Arg, Ala, Nle and Ser,

Xaa4 is selected from Val, Leu, Nle, Ile, Thr, Ala and Abu, and

Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys;

or such a sequence where one or more of the loop 1 residues Gly, Tyr, Lys and Leu are subject to conservative amino acid substitution or side chain modification, or a salt, ester, amide, prodrug or cyclised derivative thereof.

4. (Withdrawn) The χ -conotoxin peptide according to claim 3 consisting of the following sequence of amino acids:

Xaa1 Xaa2 Xaa3 Xaa4 Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQ ID NO. 4

where Xaa1 is selected from Trp, Tyr, Phe, hPhe, Ala, MeY, Arg, Ben and Nap,

Xaa2 is selected from Arg, Asn, Lys, BHK, Orn, Lys, DArg, Nle, DLys, DMK, DAsn, Thr, ABZ, Nap, Cit and Val,

Xaa3 is selected from Gly, Asp, Lys, Arg, Ala, Nle and Ser,

Xaa4 is selected from Val, Leu, Nle, Ile, Thr, Ala and Abu, and

Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys,

or such a sequence where one or more of the loop 1 residues Gly, Tyr, Lys and Leu are subject to conservative amino acid substitution or side chain modification or a salt, ester, amide or prodrug thereof.

5. (Currently amended) The χ -conotoxin peptide according to claim 1 comprising the following sequence of amino acids:

Xaal Xaa2 Xaa3 Xaa4 Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQ ID NO. 5

where Xaal is an N-terminal residue and is selected from pGlu, DpGlu, Pro, Hyp or an N-acetylated amino acid residue;

Xaa2 is selected from Arg, Asn, Lys, BHK, Orn, Lys, DArg, Nle, DLys, DMK, DAsn, Thr, ABZ, Nap, Cit, Val and a deletion,

Xaa3 is selected from Gly, Asp, Lys, Arg, Ala, Nle and Ser,

Xaa4 is selected from Val, Leu, Nle, Ile, Thr, Ala and Abu, and

Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys;

or such a sequence where one or more of the loop 1 residues Gly, Tyr, Lys and Leu are subject to conservative amino substitution or sidechain side-chain modification, wherein said substitution or side chain modification for Tyr is a substitution of Tyr with MeY, Phe or Trp, and said substitution or side chain modification for Leu is a substitution of Leu with Val, Ile, Hle or Nle, or a salt, ester, amide or prodrug thereof.

6. (Currently amended) The χ -conotoxin peptide according to claim 5 consisting of the following sequence of amino acids:

Xaal Xaa2 Xaa3 Xaa4 Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQ ID NO. 5

where Xaal is an N-terminal residue and is selected from pGlu, Pro, Hyp or an N-acetylated amino acid residue;

Xaa2 is selected from Arg, Asn, Lys, BHK, Orn, Lys, DArg, Nle, DLys, DMK, DAsn, Thr, ABZ, Nap, Cit, pGlu, Val and a deletion,

Xaa3 is selected from Gly, Asp, Lys, Arg, Ala, Nle and Ser,

Xaa4 is selected from Val, Leu, Nle, Ile, Thr, Ala and Abu, and

Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys;

or such a sequence where one or more of the loop 1 residues Gly, Tyr, Lys and Leu are subject to conservative amino and substitution or said chain modification, wherein said substitution or side chain modification for Tyr is a substitution of Tyr with MeY, Phe or Trp, and said

substitution or side chain modification for Leu is a substitution of Leu with Val, Ile, Hle or Nle,
or a salt or prodrug thereof.

7. (Withdrawn) The χ -conotoxin peptide according to claim 2 comprising the following sequence of amino acids:

Xaa2 Xaa3 Xaa4 Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQ ID NO. 6

where Xaa2 is BHK, Orn, Arg, DArg or DMK;

Xaa3 is selected from Gly, Asp, Lys, Arg, Ala, Nle and Ser,

Xaa4 is selected from Val, Leu, Nle, Ile, Thr, Ala and Abu, and

Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys;

or such a sequence where one or more of the loop 1 residues Gly, Tyr, Lys and Leu are subject to conservative amino acid or side chain modification, or a salt, ester, amide, prodrug or cyclised derivative thereof.

8. (Withdrawn) The χ -conotoxin peptide according to claim 7 consisting of the following sequence of amino acids:

Xaa2 Xaa3 Xaa4 Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQ ID NO. 6

where Xaa2 is BHK, Orn, Arg, DArg or DMK;

Xaa3 is selected from Gly, Asp, Lys, Arg, Ala, Nle and Ser;

Xaa4 is selected from Val, Leu, Nle, Ile, Thr, Ala and Abu; and

Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys;

or such a sequence where one or more of the loop 1 residues Gly, Tyr, Lys and Leu are subject to conservative amino acid or side chain modification, or a salt, ester, amide, prodrug or cyclised derivative thereof.

9. (Withdrawn) The peptide according to claim 2 wherein Xaa1 is Trp, Tyr or hPhe.

10. (Withdrawn) The peptide according to claim 9 wherein Xaa1 is Trp.

11. (Withdrawn) The peptide according to claim 2 wherein Xaa2 is Arg, Lys or Asn.
12. (Previously presented) The peptide according to claim 5 wherein Xaa1 is pGlu or DpGlu.
13. (Previously presented) The peptide according to claim 5 wherein Xaa2 is a deletion.
14. (Withdrawn) The peptide according to claim 5 wherein Xaa2 is BHK or Orn.
15. (Withdrawn) The peptide according to claim 2 wherein Xaa3 is Gly or Asp.
16. (Withdrawn) The peptide according to claim 15 wherein Xaa3 is Gly.
17. (Withdrawn) The peptide according to claim 2 wherein Xaa4 is Leu, Nle or Val.
18. (Withdrawn) The peptide according to claim 2 wherein Xaa5 is selected from the group consisting of His, Arg, Trp, Nal, Glu and a deletion.
19. (Withdrawn) The peptide according to claim 18 wherein Xaa5 is Arg or His.
20. (Withdrawn) The peptide according to claim 2 wherein Xaa6 is selected from the group consisting of Hyp, Pro, Ala, Tic, Pip, MeY, DMD, Phe, THZ, Glu, Nle, Tyr and a deletion.
21. (Withdrawn) The peptide according to claim 20 wherein Xaa6 is Hyp or Pro.
22. (Withdrawn) The peptide according to claim 1 wherein the Tyr of loop 1 has been replaced with MeY and/or the Leu of loop 1 is replaced with Hle or Nle.
23. (Previously presented) The peptide according to claim 5 wherein the Tyr of loop 1 has been replaced with MeY and/or the Leu of loop 1 is replaced with Hle or Nle.

24. (Withdrawn and currently amended) The peptide according to claim 1 or claim 5 having consisting of from 11 to 20 amino acids.

25. (Withdrawn) An isolated, synthetic or recombinant χ -conotoxin peptide as set forth in Table 2.

26. (Withdrawn) An isolated, synthetic or recombinant peptide as set forth in Table 3, excluding SEQ ID NO.1 and 7.

27. (Currently amended) The peptide according to claim 1 with the ability to selectively inhibit neuronal ~~noradrenaline~~amine transporter, and has negligible or no substantial anticholinergic effect.

28. (Currently amended) A composition comprising an isolated, synthetic or recombinant χ -conotoxin peptide having the ability to inhibit neuronal ~~noradrenaline~~amine transporter, wherein said χ -conotoxin peptide comprises the following sequence of amino acids:

Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQ ID NO. 3

where Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys, or such a sequence in which loop 1 residues Gly, Tyr, Lys or Leu are subject to conservative amino acid substitution or side chain modification, wherein said substitution or side chain modification for Tyr is a substitution of Tyr with MeY, Phe or Trp, and said substitution or side chain modification for Leu is a substitution of Leu with Val, Ile, Hle or Nle, with the proviso that the peptide is not χ -MrIA or χ -MrIB; or a salt, ester, amide, prodrug or cyclised derivative thereof, and a pharmaceutically acceptable carrier or diluent.

29-30. (Cancelled)

31. (Withdrawn) Use of an isolated, synthetic or recombinant χ -conotoxin peptide having the ability to inhibit neuronal noradrenaline transporter, wherein said χ -conotoxin peptide comprises the following sequence of amino acids:

Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQ ID NO. 3

where Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys, or such a sequence in which loop 1 residues Gly, Tyr, Lys or Leu are subject to conservative amino acid substitution or side chain modification, with the proviso that the peptide is not χ -MrIA or χ -MrIB; or a salt, ester, amide, prodrug or cyclised derivative thereof, in the manufacture of a medicament for the treatment or prophylaxis of urinary or cardiovascular conditions or diseases, or mood disorders, or for the treatment or control of pain or inflammation.

32. (Cancelled)

33. (Withdrawn) Use of the peptide according to claim 1 as an inhibitor of neuronal noradrenaline transporter, or in the treatment or prophylaxis of diseases or conditions in relation to which the inhibition of neuronal noradrenaline transporter is associated with effective treatment.

34. (Withdrawn) The use according to claim 33 in the treatment or prophylaxis of urinary or cardiovascular conditions or diseases or mood disorders or for the treatment or control of pain or inflammation.

35. (Withdrawn) A method for the treatment or prophylaxis of urinary or cardiovascular conditions or diseases or mood disorders or for the treatment or control of pain or inflammation including the step of administering to a mammal an effective amount of an isolated, synthetic or recombinant χ -conotoxin peptide having the ability to inhibit neuronal noradrenaline transporter, wherein said χ -conotoxin peptide comprises the following sequence of amino acids:

Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys SEQID NO. 3

where Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys, or such a sequence in which Gly, Tyr, Lys or Leu are subject to conservative amino acid substitution or side chain modification, with the proviso that the peptide is not χ -MrIA or χ -MrIB; or a salt, ester, amide, prodrug or cyclised derivative thereof.

36. (Cancelled)

37. (Withdrawn) The method according to claim 35 wherein the peptide is administered substantially simultaneously or sequentially with other active agents useful in the treatment of the conditions, diseases or disorders.

38. (Previously presented) The peptide according to claim 6, wherein Xaa1 is pGlu or DpGlu.

39. (Previously presented) The peptide according to claim 5, wherein Xaa3 is Gly or Asp.

40. (Previously presented) The peptide according to claim 39, wherein Xaa3 is Gly.

41. (Previously presented) The peptide according to claim 5, wherein Xaa4 is Leu, Nle or Val.

42. (Withdrawn) The peptide according to claim 7, wherein Xaa4 is Leu, Nle or Val.

43. (Previously presented) The peptide according to claim 5, wherein Xaa5 is selected from His, Arg, Trp, Nal, Glu and a deletion.

44. (Withdrawn) The peptide according to claim 7, wherein Xaa5 is selected from His, Arg, Trp, Nal, Glu and a deletion.

45. (Previously presented) The peptide according to claim 5, wherein Xaa5 is Arg or His.

46. (Withdrawn) The peptide according to claim 7, wherein Xaa5 is Arg or His.
47. (Previously presented) The peptide according to claim 5, wherein Xaa6 is selected from Hyp, Pro, Ala, Tic, Pip, MeY, DMD, Phe, THZ, Glu, Nle, Tyr and a deletion.
48. (Withdrawn) The peptide according to claim 7, wherein Xaa6 is selected from Hyp, Pro, Ala, Tic, Pip, MeY, DMD, Phd, THZ, Glu, Nle, Tyr and a deletion.
49. (Previously presented) The peptide according to claim 47, wherein Xaa6 is Hyp or Pro.
50. (Withdrawn) The peptide according to claim 48, wherein Xaa6 is Hyp or Pro.
51. (Withdrawn) The peptide according to claim 2, wherein the Tyr of loop 1 has been replaced with MeY and/or the Leu of loop 1 is replaced with Hle or Nle.
52. (Withdrawn) The peptide according to claim 7, wherein the Tyr of loop 1 has been replaced with MeY and/or the Leu of loop 1 is replaced with Hle or Nle.
53. (New) The peptide according to claim 1, 5 or 6, wherein said substitution or side chain modification for Gly is a substitution of Gly with Ser, Thr, Pro, Hyp or Ala.
54. (New) The peptide according to claim 1, 5 or 6, where said substitution or side chain modification for Lys is a substitution of Lys with His, Arg, ornithine, homoarginine, nor-Lys, N-methyl-Lys, N,N-dimethyl-Lys, N,N,N-trimethyl-Lys, N-1-(2-pyrazolinyl)-Arg, 2-(4-piperinyl)-Gly, 2-(4-piperinyl)-Ala, 2-[3-(2S)pyrrolinyl]-Gly, or 2-[3-(2S)pyrrolinyl]-Ala.
55. (New) The peptide according to claim 1, 5 or 6, wherein Xaa5 is selected from the group consisting of His, Arg, Trp, Nal, Glu and a deletion.
56. (New) The peptide according to claim 55 wherein Xaa5 is Arg or His.

57. (New) The peptide according to claim 1, 5 or 6, wherein Xaa6 is selected from the group consisting of Hyp, Pro, Ala, Tic, Pip, MeY, DMD, Phe, THZ, Glu, Nle, Tyr and a deletion.

58. (New) The peptide according to claim 57 wherein Xaa6 is Hyp or Pro.

59. (New) The peptide according to claim 1, 5 or 6, wherein said peptide has one disulfide bond between the first and fourth cysteine residues, and another disulfide bond between the second and third cysteine residues.